
Sheet 2 (Introduction to C#)

1. Write a C# console program that defines a Student class that contains three string private members for first name, middle name, and last name. The class should contain a function called getFullName that returns the full name from the three name parts. The class should also contains a private member variable that store the student marks (0 to 100 real number) and a function named GetGrade that returns the student grade based on the marks according to the standard grading. The marks member is to be set and retrieved through a property. Include two constructors in the class: one that takes the three name parts as parameters and the other is a parameter-less constructors. Build a static student creation counter in the class; add one to that counter when a new student is created from the class. Write the required code to test your class functionalities.
2. Extend the Student class you in problem 1 by adding three properties to the first name, middle name and the last names fields. Add also a fourth field for the student age and its associated property. All the properties should be readable and writable. Write a class to test the modified Student class. The added properties should be used in testing.
3. Extend the Student class in problem 1 by adding a third constructor that takes the three names: first, middle, and last in addition to the age of the student. Write a class to test the modified Student class.

4. In a class that contains 4 students, the grades of each student in the five class subjects were as follows:

Student/subject	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5
Student 1	77	82	74	89	100
Student 2	52	93	96	85	86
Student 3	65	83	70	95	89
Student 4	55	91	98	79	88

Write a C# program to calculate the average grade for each student in all subjects using multi-dimensional array. The program should also calculate the average grade for all the entire students in all the subjects.

5. Write a C# console program that implements a function that take any number of real quantities and return their sum using params key word. Write the necessary code to test your function.
6. Write a console C# program to track the sales per day of two months: January (31 days) and February (29 days) using a jagged array. The program should initialized the sales for the two months as shown in the following table then calculates and print the average sales per day in each month. The program should also calculate the global average sales per days during the two months.
7. Write a console C# program that contains a single generic swap function. Demonstrate the generic

feature of the function by calling it to swap two integers and to swap two strings.

8. Write a C# console program that creates a dynamic integer list, put some integer values in it, prints the number of items in the list, clear the list and reprint the number of items in the list. The program also creates a dynamic list of strings called names, add some names to it, and print the names using the foreach C# statement. Use the generic List in creating the lists.